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MEDICAL NEWS LETTER

Editor - Captain L. B. Marshall, MC, USN (RET)

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Policy

The U. S. Navy Medical News Letter is basically an official Medical Department publication inviting the attention of officers of the Medical Department of the Regular Navy and Naval Reserve to timely up-to-date items of official and professional interest relative to medicine, dentistry, and allied sciences. The amount of information used is only that necessary to inform adequately officers of the Medical Department of the existence and source of such information. The items used are neither intended to be nor susceptible to use by any officer as a substitute for any item or article in its original form. All readers of the News Letter are urged to obtain the original of those items of particular interest to the individual.

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Notice

Due to the critical shortage of medical officers, the Chief, Bureau of Medicine and Surgery, has recommended, and the Chief of Naval Personnel has concurred, that Reserve medical officers now on active duty who desire to submit requests for extension of their active duty at their present stations for a period of three months or more will be given favorable consideration. BuPers Instruction 1926.1B applies.

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Penicillin Prophylaxis of Gonorrhea

BuMedInst. 6222.3B of 25 October 1954 has been interpreted by many as prohibiting the use of oral penicillin for the prevention of gonorrhea. This interpretation is incorrect. Medical officers are at liberty to use this chemoprophylaxis as they desire and should not refuse it to those who request it only on the basis of this instruction.

For the reasons set forth in this instruction, major emphasis on the prevention of venereal diseases should not be focused on chemoprophylaxis, since oral penicillin has been shown to be effective only in the prevention of gonorrhea, whereas the real medical department problem is bound up with other venereal diseases.

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The printing of this publication has been approved by the Director of the Bureau of the Budget, 16 May 1955.

CB 1348 in Malignant Lymphoma

Everett, Roberts, and Ross synthesized a series of water-soluble aromatic nitrogen mustards one of which, p-(di-2-chlorethylamino)-phenylbutyric acid (CB 1348), was found to be a powerful inhibitor of the transplanted Walker rat tumor 256 and was submitted for clinical trial.

Ninety-three patients suffering from advanced carcinoma and from lymphomas have been treated with CB 1348 since September 1952. This report concerns only the cases of malignant lymphoma of which there were 76. Fourteen of these have been omitted from the report because the diagnosis was in doubt, because of inadequate follow-up, or because incomplete treatment was given. The 62 remaining cases include 23 of Hodgkin's disease, 20 of lymphocytic lymphoma (including 8 cases of chronic lymphocytic leukemia), 11 of reticulum-cell sarcoma, 6 of follicular lymphoma, and 1 each of generalized exfoliative erythrodermia and mycosis fungoides.

Administration was usually by mouth, but a few patients received the sodium salt intravenously, either alone or in addition to oral therapy.

The disadvantages of existing methods of treatment of the lymphomas are well known. A preparation of similar efficacy but lacking the side-effects and toxic properties of existing cytotoxic drugs would find a place in therapeutics. To some extent, CB 1348 fulfills these requirements. It is relatively free from side-effects, and from the limited experience of the authors, it is at least as effective as any other method in follicular lymphoma and in lymphocytic lymphoma. In the latter group particularly, treatment by conventional agents is often unsuccessful because dosage is limited by thrombocytopenia, or in the subleukemic group by low leukocyte counts; yet CB 1348 has been used successfully in these circumstances. In Hodgkin's disease, the proportion of patients who responded well is small, but useful remissions have been obtained—in two instances, better than those following T. E. M. CB 1348 is safer than T. E. M.; this is especially important when repeated courses are required for it is rarely safe to give more than three courses of T. E. M. Unexpected and irreversible bone-marrow damage following previously well tolerated doses of T. E. M. is not uncommon even when the blood picture is apparently normal before treatment. With CB 1348, up to six courses have been given safely. Severe bone-marrow damage can follow CB 1348 administration, but it is usually the result either of excessive dosage or of treating patients with impaired bone-marrow function.

The dosage likely to cause bone-marrow damage almost always lies well outside the therapeutic range—at any rate for first courses. For these reasons, the authors believe that CB 1348 deserves further trial in the treatment of malignant lymphoma.

CB 1348 may be safely used in routine therapy if simple precautions are taken to avoid damaging the bone marrow. The marrow is especially vulnerable (1) shortly after a course of treatment with ionizing radiations or cytotoxic drugs, including CB 1348 itself; (2) when it is infiltrated with lymphomatous tissue; and (3) when it is hypoplastic as a result of long-standing and usually extensively treated disease. CB 1348 should, therefore, not be used within four weeks of the end of a full course of radiation therapy or chemotherapy.

When small doses of palliative x-radiation have been given over small fields remote from foci of bone marrow, the neutrophil and platelet counts will not usually be depressed and chemotherapy may be safely started. If one or both of these counts are depressed, treatment should be postponed until normal counts are obtained, usually one or two weeks later. Whether treatment has been given or not, persistently low neutrophil and platelet counts or peripheral lymphocytosis should lead to suspicion of bone-marrow infiltration. Marrow puncture should be performed in these cases. If lymphocytic infiltration is present, as is frequently the case in lymphocytic lymphoma and sometimes in follicular lymphoma, CB 1348 may be given, but at less than standard dosage. In some cases of Hodgkin's disease, when marrow cannot be obtained from several sites by aspiration, trephine specimens may show extensive fibrosis. These cases are not suitable for chemotherapy.

The standard daily dose is 0.2 mg. per kg.; the whole dose is given at once and no special precautions are necessary. When lymphocytic infiltration of the bone-marrow is present or when the marrow is hypoplastic, the daily dose should not exceed 0.1 mg. per kg. Out-patient supervision is satisfactory in the less seriously ill patients, but during treatment, approximately weekly visits are essential so that hemoglobin estimation and total and differential leucocyte counts can be performed; routine platelet counts may be omitted provided skin and mucous membranes are inspected for hemorrhagic phenomena. It is not safe to leave a patient for more than two weeks without clinical and hematological examination, and it is helpful to plot the blood counts at each attendance on a chart on which temperature, weight, and spleen size may also be recorded.

Clinical improvement is usually evident in the third week of treatment, but a four-weeks trial is necessary before giving up treatment as ineffective. Administration need not be discontinued as soon as the neutrophil count begins to fall, but it should be remembered that the fall may continue for 10 days after the last dose, and that as the total dose approaches 6.5 mg. per kg. there is a real risk of causing irreversible bone-marrow damage. An average course at 0.2 mg. per kg. per day might last 4 weeks (5.6 mg. per kg.). If maintenance therapy is contemplated in patients who show slowly progressive improvement during the initial weeks of treatment,

who tolerate the drug well, and whose blood picture remains stable, the maintenance dose should not exceed 0.1 mg. per kg. per day, and may well be kept 0.03 mg. per kg. It is probable that short courses of treatment carry less risk than maintenance therapy. Both methods have been effective, but it is possible that continuing therapy may give an illusion of "maintenance" to a remission that would have proceeded without further treatment. (Galton, D. A. G., et al., Clinical Trials of p-(DI-2-Chloroethylamino)-Phenylbutyric Acid (CB 1348) in Malignant Lymphoma: Brit. M. J., 4949: 1172-1176, November 12, 1955)

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Chronic Ulcerative Colitis in Children

One hundred twenty-two cases of ulcerative colitis in children seen at the Mayo Clinic between January 1944 and January 1954 are reviewed. The article concerns particularly the roentgen aspects of the condition. In each case, some combination of clinical, roentgenologic, and proctoscopic evidence of idiopathic chronic ulcerative colitis was present. Amebiasis and tuberculous ulcerative colitis have been excluded from this study.

Chronic ulcerative colitis occurs almost twice as often among boys as among girls; 76 of the 122 children were boys. The cases were divided rather arbitrarily into groups based on the age of the patient: birth to 4 years, eleven cases; 5 to 9 years, twenty-eight cases; 10 through 15 years, 83 cases. The disease occurs with increasing frequency up to 15 years of age. Early adolescence appears to be a particularly dangerous time because of rapid progression of the disease and severe changes in short periods.

The onset of chronic ulcerative colitis in childhood may be gradual and insidious or it may be sudden. Its type has a bearing on the roentgenologic findings, because if there is a rather sharp onset of bloody diarrhea, extensive roentgen changes may be apparent within less than two weeks.

Bloody diarrhea is characteristic of the disease and with few exceptions is present in every case. Frequently, the onset is related to some inflammatory episode involving the respiratory tract.

Of equal value with the roentgenologic study is the proctosigmoidoscopic examination. The correlation between the proctoscopic findings and the roentgenologic manifestations of early disease is very good. Rarely (3 cases), will the roentgenologic findings be negative if the proctoscope shows evidence of ulcerative colitis. Similarly, positive roentgenographic evidence of disease is uncommon (6 cases) in the face of negative findings.

Apparently, no time lag exists between the proctoscopic diagnosis of chronic ulcerative colitis and the roentgenologic diagnosis. A careful review of the cases reported in this article reveals no significant difference in the diagnostic results of these procedures; it serves only to emphasize the necessity of both examinations.

The types of ulcerative colitis have been described by Weber and Bargen. Type 1 is the most frequently encountered form of the disease, with roentgenologic findings and proctoscopic changes beginning in the rectum and progressing orad. In Type 2, there is roentgenologic evidence of the disease, but the proctoscopic manifestations are either equivocal or lacking. Type 3 reveals an unusual proctoscopic appearance with a peculiar mucosal pattern and ulcers in the rectum and sigmoid. These patients frequently show roentgenologic evidence of disease in the right side of the colon and normal appearing areas in other segments. In 5 cases, ulcerative colitis, Type 3, was suggested by the proctoscopist. These cases presented an unusual mucosal pattern with ulcers in the rectum and sigmoid apparent on proctoscopy. The roentgen examination revealed definite evidence of chronic ulcerative colitis primarily in the right portion of the colon.

Weber has said that the roentgen manifestations of all forms of ulcerative colitis reflect the gross morphologic changes produced by the pathologic process in the size, shape, and contour of the part of the intestine affected.

The roentgen examination of the colon for evidence of chronic ulcerative colitis consists of roentgenoscopy during administration of a barium enema and of evaluation of changes apparent on a roentgenogram obtained after evacuation. The roentgen diagnosis should be based on a correlation of these findings.

The roentgenoscopic manifestations of chronic ulcerative colitis in children are no different than they are in the adult. The changes depend entirely on the degree of involvement of the bowel and the stage of the disease. Briefly, the recognizable findings are narrowing and shortening of the bowel; thickening of the wall, determined by palpation; polypoid hyperplasia; and destruction of the mucous membrane. These manifestations are those of moderately advanced chronic ulcerative colitis rather than of early or minimal involvement.

It is not difficult to explain the association of regional enteritis and the development of a roentgenographic pattern in the colon which is indistinguishable from chronic ulcerative colitis. Occasionally, however, the roentgenologist will be confronted with the typical roentgenographic manifestations of ulcerative colitis, although the clinical story will not be consistent with the disease and the proctoscopist will be unable to confirm its presence. Two such cases occurred in the present series: one patient had nephritis with edema and ascites, and the other cystic fibrosis of the

pancreas. It should be noted that any condition that may produce edema or superficial erosion of the mucous membrane can simulate the roentgenologic criteria for the diagnosis of chronic ulcerative colitis. As pointed out, chronic ulcerative colitis tends to be more severe in children from 10 to 15 years of age. Changes in the bowel, evident on roentgenologic examination, are more marked and complications are more frequent. The disease is rare in infants. The younger the child, the better the chance of both clinical and roentgenologic improvement.

The differences between chronic ulcerative colitis of idiopathic origin in adults and in children are minor. The disease manifests itself in the same fashion and the same roentgenologic criteria for diagnosis apply.

Both the proctoscopist and the radiologist provide valuable diagnostic information to the clinician. Diagnosis depends on correlation of clinical, proctoscopic, and roentgenologic information.

More chance of recovery appears if the disease is detected early in a child, and the authors are of the opinion that in the prepuberty group there appears to be less roentgenologic evidence of complications. Chronic ulcerative colitis in children, while a formidable disease, may be susceptible to control if detected early and managed carefully. (Hodgson, J. R., Kennedy, R. L. J., The Roentgenologic Aspects of Chronic Ulcerative Colitis in Children: Radiology, 65: 671-678, November 1955)

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Tuberculosis of the Breast

Tuberculosis of the breast is reviewed and experience with 10 cases at the New York Hospital-Cornell Medical Center presented.

The majority of the cases reported in the literature have been described as occurring in the child-bearing age. In this group, from 20 to 40 years of age, tuberculosis is most prevalent. In the present series of 10 cases, 3 patients were more than 60 years of age (the oldest was 72), 3 patients were between 45 and 50 years, and 4 patients were between the ages of 20 and 44 years. Deaver and McFarland reported that 70% of their patients were from 20 to 50 years of age. Schipley and Spencer stated that the average age of their patients was 44 years.

In the past, large numbers of cases of breast tuberculosis have been incorrectly classified as primary. This is an unfortunate misnomer, for most of these lesions were undoubtedly secondary to a focus elsewhere in the body and reached the breast by one of several routes which are described. While it is true that the breast may be the only organ showing clinical evidence of tuberculosis, absolute proof that the primary disease

began in the breast is possible only if a complete autopsy shows the tuberculous lesion to be the oldest tuberculous process in the body. No proof was offered in these so-called primary cases other than that the patient was in apparently good health and had no previous history of active tuberculous infection. It is the author's opinion that primary tuberculosis of the breast is extremely uncommon and should be reserved for the rare instance in which direct inoculation of the breast occurs from an infected needle or instrument.

Tuberculosis of the breast is usually unilateral and in only a few instances have both breasts been involved. This is in contrast to the usual tendency of the tubercle bacillus to affect each of bilateral organs (lung, kidney, fallopian tube, epididymis). It confirms the view that tuberculous mastitis rarely results from a hematogenous infection. The following types of tuberculous mastitis have been described: nodular (discrete disseminated, or confluent); sclerosing type; and atypical types.

The most frequent initial symptom of tuberculous mastitis is a painless lump. This has been noted in 65 to 75% of the cases reported. The lump gradually increases in size and may or may not become fixed to the skin. Pain is an infrequent initial symptom but may occur later in the disease in the course of abscess formation. Axillary lymph node enlargement is present in 50 to 75% of the patients and frequently may precede the development of the breast swelling. The disease progresses, if untreated, for a period of several months and an abscess may form which either ruptures or is incised, resulting in the formation of draining sinuses. Occasionally, secondary infection with pyogenic organisms produces a more acute course.

In the sclerosing type, the mass becomes hard and fixed to the skin and deeper structures. Depending on its proximity to the central portion of the breast, the process may cause retraction of the nipple.

Tuberculous mastitis may occur in patients who appear in apparent good health despite the fact that unrecognized foci of tuberculosis may be present in other parts of the body. The upper outer quadrant of the breast is most frequently involved due to the proximity of the axillary lymph nodes from which retrograde lymphatic extension occurs. However, any portion of the breast may be affected, including the central portion under the nipple. A nontender nodular mass is usually the first sign detected. Redness and tenderness of the skin overlying the mass are signs that develop if the condition progresses to abscess formation. Deaver and McFarland have described retraction of the nipple in approximately one-third of 79 cases. Discharge from the nipple is not a frequent sign. Fistulae occur in approximately one-third of the cases.

The appearance of the breast depends on the type and extent of the underlying disease. In the nodular type, no enlargement of the breast

may be discernible, whereas, in the confluent type, the involved breast may appear enlarged. Fluctuation with abscess formation and redness of the skin is found in patients who present themselves late in the course of the disease. In the sclerosing type, the breast may appear smaller and retraction of the skin and fixation to the deeper structures may be apparent.

Because of the rarity of tuberculosis of the breast, its similarity to other conditions which involve the breast, and the fact that it is seldom correctly diagnosed preoperatively, the several other conditions for which tuberculosis is mistaken ai briefly mentioned.

Before tuberculous mastitis has progressed to the stage of sinus formation and when only a lump is palpable in the breast, it may be mistaken for carcinoma, a fibro-epithelial type of tumor, chronic cystic mastitis, pyogenic mastitis, gumma, sarcoma, or actinomycosis. Carcinoma has been most frequently diagnosed in patients with tuberculous mastitis, particularly in the sclerosing type, but also in the nodular type when fixation of the skin and axillary adenopathy are present.

The differential diagnosis of tuberculosis from other breast lesions is not simple. Biopsy for histologic study and complete bacteriologic examination afford the only dependable means of accurate diagnosis.

In addition to the local treatment of tuberculous mastitis, such general measures as proper rest, diet, and a careful search for other foci of tuberculosis are of importance. Treatment for tuberculous mastitis should include a pre- and postoperative course of antituberculous drugs and local excision of all tuberculous tissue including axillary lymph nodes, if present. If the diagnosis of tuberculosis is made postoperatively, the patient should receive a course of antituberculous drugs and be reoperated upon if all tuberculous tissue has not been initially removed. (Schaeffer, G., Tuberculosis of the Breast: Am. Rev. Tuberc., 72: 810-822, December 1955)

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Postoperative Hypoparathyroidism

Fifty cases of surgically induced hypoparathyroidism are reported. The data have been obtained from the authors' personal experiences incident to the care of recent patients, some of which extended for as long as 28 years. Many of the latter group have been recently examined. The authors have been especially interested in studying the late effects of the disease as seen in some of these patients in whom the disorder has persisted for many years. The results of this study have suggested the need for review of relevant embryologic, anatomic, and physiologic considerations, and for

re-examination of current clinical concepts related to parathyroid deficiency. Review of the pertinent literature suggests that parathyroid dysfunction following surgery is tacitly regarded as usually being transient and, in any case, as presenting no particular problem in management, should it prove permanent. Reference is made to complications which may develop with improper management, the implication being that these occur infrequently and are indications of neglect on the part of the responsible physician. The authors' experience has been to the contrary; permanent parathyroid deficiency following thyroid surgery is not infrequent. Management of these patients is often difficult, and incapacitating complications are not uncommon even in patients under medical surveillance. Failure to note permanent hypoparathyroidism among a large group of patients who have had thyroid surgery performed can have two possible explanations: the postoperative follow-up has failed in thoroughness, or has not extended for a long enough time.

Onset of clinical hypoparathyroidism occurred most often during the week following operation. Tingling, paresthesias, and numbness of the fingers and toes were the most common presenting symptoms. Tonic spasms of the fingers and toes (carpopedal spasm) and evidence of increased neuromuscular irritability (Trousseau's, Chvostek's and Erb's signs) were present at this time, or soon appeared. Tightness and stiffness of other muscle groups, a feeling of restriction of freedom of inspiration and expiration, hyperventilation, and laryngospasm occurred much less frequently and later.

In a patient who has recently undergone thyroid surgery, the appearance of these symptoms and signs is pathognomonic of parathyroid insufficiency. Laboratory determinations done at the onset showed depression of the serum calcium, elevation of the serum phosphorous, and decreased or absent calcium in the urine as determined by the Sulkowitch test. Further confirmation of the diagnosis is provided by the prompt disappearance of the symptoms when calcium is administered intravenously.

Differentiation from tetany caused by other disorders, that is, tetany of the newborn, osteomalacia, infantile rickets, chronic steatorrhea, pregnancy, renal failure when acidosis is corrected, loss of gastric juice, sodium bicarbonate therapy, or hyperventilation or from nonsurgical hypoparathyroidism is rarely difficult because of the clear cut history. Occasionally, a problem is presented in differential diagnosis by the development of the symptoms and signs of tetany unassociated with recent thyroid surgery. Of more importance is the recognition of hypoparathyroidism, surgical or nonsurgical, as the cause of cataracts, convulsive episodes, mental deterioration, and psychosis. Patients with these late sequelae may have none of the typical symptoms or signs which have been discussed.

Infrequently, the onset of the hypoparathyroid state will be announced by the rapid development of frightening respiratory difficulty resulting in

frantic efforts by the patient to increase pulmonary ventilation, leading to rapid shallow respiration and aggravation of all symptoms. Intravenous calcium administration (calcium chloride or gluconate 10 ml. of a 10% solution) results in prompt correction of the hyperpneic state and improvement of the more common tingling, muscle cramps, paresthesias, numbness, and signs of increased neuromuscular irritability. This improvement results from the interruption of a vicious cycle. By raising the ionized serum calcium level, psychic and organic factors leading to neuro-muscular excitability and spasm are corrected, resulting in slower and deeper respirations leading to correction of the respiratory alkalosis. In the unusually severe case, it may be necessary to repeat this dose one or more times until satisfactory control has been obtained with definitive therapy.

Parathormone may be useful, although it is rarely necessary during this early period. Its continued use results in a refractory state within a few weeks or months so that even large doses will have no effect. This fact, combined with its relatively high cost, makes parathormone of little practical importance in the management of this disorder.

Vitamin D_2 (50,000 to 200,000 units daily) and oral calcium (calcium lactate powder 5 to 15 gm, daily) should be started as soon as the diagnosis is made. Various preparations of both these medications are available and are equally effective. The correct dosages are determined by following the patient's course, serum calcium, and phosphorous levels. After control of the parathyroid deficiency has been achieved, serum determinations will be required only infrequently but must be continued throughout the patient's life if the disorder proves permanent.

In addition to vitamin D_2 and calcium, it is most important to place the patient on a low phosphorous diet. Intake of meat, fish, whole grain cereals, and dairy products, all relatively high in phosphorous, should be limited to basic requirements.

Because of its relatively high cost, dihydrotachysterol (A. T. 10) should be reserved for the exceptional case which cannot be managed with vitamin D_2, calcium, and diet. The effect of dihydrotachysterol is about midway between parathormone and vitamin D_2, that is, while having more effect on the kidney than vitamin D_2, it has less than parathormone, more effect on calcium absorption than parathormone, but less than vitamin D_2. Before a decision is made that dihydrotachysterol is required, an adequately supervised trial with vitamin D_2, calcium, and low phosphorous diet should be extended a week or more, employing the maximum indicated doses.

After satisfactory control has been achieved as indicated by the absence of signs and symptoms and normal serum calcium and phosphorous values, the primary responsibility for management must be shifted to the patient. He must be carefully oriented regarding the nature of his problem and painstakingly instructed in its management. Proper regulation is obtained by taking sufficient medication so that no signs or symptoms of

tetany are present. The use of the Sulkowitch test provides real assistance to the patient. Satisfactory control exists if an early morning urine specimen shows a / precipitate. If none is present, the serum calcium is low and the dosage of medications should be increases; a / / / precipitate indicates overtreatment and dosages should be decreased. One of the greatest values of the Sulkowitch test is in preventing overtreatment. In order to assure adequate management, it is necessary to obtain periodic serum calcium and phosphorous levels for as long as the disorder persists. Of importance, is periodic re-evaluation by an informed physician. The patient with permanent hypoparathyroidism is to be regarded as having a lifelong metabolic disease in every sense as serious as diabetes mellitus and requiring equally assiduous attention to the details of management. (Buckwalter, J. A., et al., Postoperative Hypoparathyroidism: Surg. Gynec. & Obst., 101: 657-666, December 1955)

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Decontamination of Anesthesia Apparatus

The decontamination of rubber parts of anesthesia machines, including the face-mask, tubing, and breathing bag, is often inadequate or occasionally entirely neglected in an effort to meet a busy surgical schedule A soap-and-water rinse is most commonly used and soaking in alcohol is sometimes employed. To meet the demands of a busy surgical service, a method of cleansing anesthesia apparatus must be available which is simple rapid, effective, and noninjurious to the patient or apparatus.

This article presents the results of a bacteriologic survey of anesthesia equipment and a practical method of decontamination. Three phases of the study were: (1) development of standard technique for culturing parts of the gas machines while doing a general bacterial survey of the current method of cleansing; (2) general bacterial survey of gas equipment after slight modification of the existing cleansing method; and (3) limited bacterial survey of such gas equipment after final modification of the existing cleansing method.

Before this study was undertaken, the current cleansing method consisted of rinsing the face-mask, the inspiratory and expiratory tubing,, and the breathing bag in soap and water, then hanging them up to dry. Endotracheal tubes, suction catheters, and oral-pharyngeal airways were also washed in soap and water, the lumens being cleaned with appropriate brushes, and then placed in Zephiran solution, 1:1000, for 12 hours before being used again. All of the equipment was washed in the same container, the same soapy solution often being used for as many as from four to six different sets of equipment.

Early in the study, it was noted that the apparatus which had been soaked in Zephiran solution never grew any organisms. The author then sought a method of limited soaking which would eliminate most of the organisms demonstrated. Accordingly, the 5-minute Zephiran (1:1000) soak was tried. The best spectrums of bacterial growth resulted from culturing the inspiratory and expiratory tubing and the breathing bag. These items were, therefore, chosen for further study in order to evaluate the effectiveness of the five-minute Zephiran soak.

In comparing tabulated results, the author found almost complete disappearance of organisms after the five-minute Zephiran soak. This occurred in spite of the fact that on several occasions the same Zephiran solution was used for as many as four sets of tubing and breathing bags. The cultures were allowed to incubate for three days at room temperature after the original incubation period at 35°C., because it has been demonstrated that organisms not growing at 35°C., frequently will do so at room temperature. Alcaligenes faecalis was the most prominent of the few organisms which grew under this method. It is felt that this organism may well be a resistant contaminant present in the reservoir of diluted Zephiran prepared for the study. This contaminant has been found to grow in 1:1000 Zephiran solution at room temperature. This same organism has also been demonstrated in various other Zephiran reservoirs in the hospital.

Aside from the alpha-hemolytic streptococci and micrococci groups, the organisms found in this study, which are not inhabitants of the normal pharynx, were Alc. faecalis, Ps. aeruginosa, and B. subtilis. All of these organisms are commonly found in feces and have been known to produce resistant genito-urinary tract infections. Ps. aeruginosa is commonly found mixed with streptococci and staphylococci and has been found in pure culture in abscesses in different parts of the body, especially in the middle ear. Cases of endocarditis and pneumonia have been reported where Ps. aeruginosa seemed to be the sole responsible microorganism. Spontaneous infection with B. subtilis in man may produce a panophthalmitis.

Because the above common contaminants are ubiquitous in dust and water, and may at any time become pathogenic, the use of Zephiran, 1:1000, is suggested for their elimination. The method is rapid, cheap, effective, and permits early and continuous re-use of limited quantities of expendable rubber equipment. No injury to either patient or anesthesia equipment was demonstrated with this cleansing method. (Gross, G. L., Decontamination of Anesthesia Apparatus: Anesthesiology, 16: 903-909, November 1955)

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Intestinal Obstruction Caused by Adhesions

This report presents a review of the authors' experience in management of obstructions caused by adhesions, and discusses this problem briefly. All cases of adhesive obstruction are included whether intestinal obstruction was the illness that necessitated hospital admission or whether it developed secondarily in the course of another disease.

The diagnosis was confirmed by operation or autopsy in 274 cases (70.6%). In 114 cases (29.4%) treated by conservative decompression, it was the clinical impression at the time—plus a current review of available records and roentgenograms—that established the diagnosis.

Obstructions were caused by adhesions of three types: postoperative adhesions, inflammatory adhesions (without antecedent surgery) and congenital bands. Most frequent were occlusions due to postoperative adhesions; 79.4% of cases were of this type. Operations on the large bowel, appendectomies, and operations for intestinal obstruction were the most common preceding surgical procedures. Inflammatory adhesions were responsible for 17.8% of obstructions. Less common causes in the order of importance were pelvic inflammatory disease, regional enteritis, cholecystitis, and ulcerative colitis. Congenital bands accounted for only 2.8% of all adhesive obstructions.

The small bowel is considerably more susceptible to obstruction by adhesions than is the colon, as is evident from the distribution of cases. The majority (88.4%) were small bowel obstructions. Only 8.0% were colic occlusions, and 3.6% of cases were of the mixed variety with obstruction simultaneously of both colon and small bowel.

The type of adhesions causing obstruction also influenced the location of the obstruction. Thus, large bowel and mixed obstructions were common in the groups due to inflammatory adhesions (30.5%) or congenital bands (22.3%) but were uncommon (6.8%) in the group of obstructions caused by postoperative adhesions.

The average age of patients was 45.9 years, and 68.6% were 60 years of age or younger. That patients in extremes of life were not exempt is evident, for 14 patients were less than one year old and 8 were over 80 years old.

The reports of McKittrick and Dennis, as well as the authors' results, indicate the necessity for early diagnosis and institution of appropriate treatment promptly in intestinal obstruction. The utilization of routine abdominal roentgenograms early in the course of all unexplained abdominal conditions may be helpful in this regard, as intestinal distension may be detected thereby when clinical abdominal distension is absent. Diagnosis and institution of treatment of obstruction before the disease is over 24 hours old offers the best prognosis. If this advantage is to be gained, the diagnosis must usually be made or suspected by the first physician in attendance.

The type of treatment to be employed in adhesive obstructions is a final consideration. Most of the recent efforts to further improve results in the treatment of intestinal obstruction have been directed toward early operation.

Based on the conclusions, the following plan for the management of adhesive obstructions has been adopted in this clinic:

1. All patients with findings suggestive or indicative of strangulation obstruction, or wherein coexisting abdominal conditions are compelling factors for immediate surgery, are operated upon as soon as they can be prepared. With few exceptions, patients who have large bowel obstructions with distension are operated upon without delay. Transverse colostomy is performed if the obstruction is not relieved by division of adhesive bands. Primary resection and anastomosis in the face of large bowel distension is not recommended.
2. In remaining patients, a trial of intestinal intubation is carried out. Conservative treatment is interrupted at any time if signs suggesting strangulation develop. At the end of a 12-hour period, abdominal roentgenograms are repeated and the patient's status is re-evaluated. If no real progress has been made in the relief of distension, conservative treatment is interrupted and operation carried out. Conservative decompression is continued if no signs or symptoms of strangulation obstruction develop and improvement is progressive. (Perry, J. F. Jr., Smith, G. A., Yonehiro, E. G., Intestinal Obstruction Caused by Adhesions: Ann. Surg., 142: 810-816, November 1955)

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Rupture of the Pregnant Uterus

From May 1931 to July 1953, there were 52 ruptures of the pregnant uterus among 71, 483 delivered patients, an incidence of 0.07% which represents one of the higher rates among the reported incidences of other institutions. Undoubtedly, instances of uterine rupture have occurred which were not diagnosed correctly and which were mistakenly considered to be postpartum hemorrhage and shock due to other causes and in a subsequent pregnancy the uterus may have ruptured again or the laceration may have extended sufficiently to permit detection.

The ruptures of the uterus incident to childbirth were customarily classified as noncesarean ruptures and cesarean or postsurgery ruptures. In this series of 52 cases, 37 ruptures of the uterus were classified as noncesarean ruptures of which 31 cases were traumatic and 6 cases were

spontaneous, and induced or traumatic ruptures. In this series of 52 cases, 37 ruptures of the uterus were classified as noncesarean ruptures of which 31 cases were traumatic and 6 cases were spontaneous. Fifteen cases were considered postcesarean ruptures, of which only one instance of traumatic rupture was noted. Such a classification properly emphasized the unknown integrity of the surgical scar, but on the other hand, it failed to stress uterine scarring sustained during previous forceps deliveries, intrauterine manipulations, curettages, et cetera. Another method of classification divided uterine rupture into complete and incomplete ruptures depending upon whether or not the peritoneum remained intact. The location and extent were of greater importance, however, because rupture and fatal hemorrhage occurred and still remained within the confines of the peritoneum.

The signs and symptoms of uterine rupture varied according to its type and location. In this series, the classical signs and symptoms of rupture, as abdominal pain and tenderness, cessation of labor, and shock were noted only in the spontaneous uterine ruptures. The majority of patients with traumatic ruptures were anesthetized or given sedation and the classical clinical picture was masked. Immediate postpartum hemorrhage and shock were the characteristic signs in 90% of the patients in the traumatic group. Forty percent of the patients with postsurgery uterine ruptures gave no evidence of impending or actual rupture of the uterus.

The prime requisite for successful management was early diagnosis and active treatment, consisting of adequate blood and fluid replacement, surgical intervention, and liberal use of antibiotics postoperatively. The procedure of choice was hysterectomy, complete or incomplete, which was performed in 40 cases (77%). The uterus was packed in 5 cases; in an additional 3 cases, the uterine packing was augmented by clamping the uterine arteries as a terminal procedure. In 2 instances of separation of a previous cesarean scar, successful repair was accomplished.

It is evident that every obstetrical procedure or condition is associated with an irreducible minimal hazard of uterine rupture and it is also evident that most uterine ruptures are produced by failure to heed time-tested indications and conditions required for every obstetrical procedure. Using the strictest criteria in analyzing the 52 cases, one may speculate that the 31 traumatic uterine ruptures (88%) in the noncesarean group would have preventable factors.

From 1931 to 1953, there were 52 cases (0.07%) of rupture of the pregnant uterus among 71,483 delivered patients. The associated maternal mortality was 15% and the uncorrected fetal mortality was 50%.

Uterine rupture remains a serious surgical emergency but there were no maternal deaths in the 21 ruptures which occurred from 1942

to 1953. The contributing factors in the reduction were the following: better understanding of the physiology of labor, hospital delivery, earlier diagnosis, more adequate blood and fluid replacement, immediate surgical intervention, and employment of antibiotics.

Forty-five percent of the traumatic uterine ruptures resulted from version and extraction. Stricter adherence to the indications and conditions required for the obstetrical procedure and the more liberal use of cesarean section were the most important factors in prevention of ruptures.

Fifteen cases of uterine rupture occurred in patients with previous sections, this being 1.0% of the patients with a previous section who came to term. The policy of once a section always a section is strongly advised.

Prevention by the properly selected obstetrical operation is better than treatment. When a rupture of the uterus is suspected, the management of choice is early diagnosis by manual exploration of the uterine cavity and visual inspection of the vagina, cervix, and lower uterine segment, judicious blood and fluid replacement, and surgical treatment. In most instances, a subtotal hysterectomy offers the most rapid control of hemorrhage with minimal trauma. (Bak, T. F., Hayden, G. E., Rupture of the Pregnant Uterus: Am. J. Obst. & Gynec., 70:961-971, November 1955)

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Carcinoma of the Urinary Tract - Medicolegal Aspects

The role of trauma in the production of cancer has always been a moot subject. Too many "traumatic cancers" have recently appeared in medicolegal literature, despite the fact that there is no association between a single trauma and the development of cancer. The relation of trauma and cancer in most litigated cases has been overshadowed by the importance placed on the theory that aggravation of an existing tumor may occur as a result of trauma.

The industrial specialist, like the industrial physician, is well aware that the average person is prone to blame his present affliction upon an alleged accident or so-called occupational disease. No matter how intelligently the problem may be approached, there is often great difficulty in determining just what is to be regarded as cause and what may be attributed to mere coincidence.

Once it is established that an accident has occurred "as a result of" or "arising out of" employment, it becomes necessary to consider whether the accident, injury, or disease would have happened to the patient on the street, at home, or anywhere outside his occupational environment. In other words, a causal relation must be established or ruled out. To evaluate causal relationship properly, it is well to bear in mind that the

question of causation automatically arises when, as a result of the claimant's testimony, he alleges that the accident or exposure caused the present affliction and complaint. He also claims that prior to the alleged injury he had no symptoms nor had he any disease process. Obviously, in a case of cancer the injured person honestly believes that it would be impossible for the disease to have existed prior to the alleged accident or injury.

Frequently, in attempting to evaluate causal relationship, the decision is influenced by one of the tenets of the law, "In dubio pro laeso," which means "In doubt, always favor the injured." This attitude is unjust and in no way aids in the solution of this universal problem. It is not fair for any verdict to be given on a basis of sympathy and such a decision should never be tolerated.

To evaluate the causal relation of trauma to a malignant tumor claimed to be associated therewith, certain postulates must be fulfilled. No possible relation of injury to the development of cancer can be fulfilled in any hypothetical case without such an evaluation. The following criteria have been established for evaluating the possible relation of an injury to the development of cancer: (1) authenticity and adequacy of the trauma; (2) previous integrity of the wounded part; (3) origin of tumor at exact point of injury; (4) reasonable time lapse between injury and appearance of the tumor; and (5) positive diagnosis of presence and type of tumor.

These criteria or postulates are the basic factors in establishing and assessing the possible responsibility of an injury for the development of cancer. Yet frequently, as a result of an inadequate history, inadequate medical records, faulty examination, faulty microscopic interpretation or illogical evaluation of causal relations, a neoplastic disease may be interpreted as causally related to trauma.

The author's opinion is that, as pointed out by Mock and Ellis, in any case in which cancer is claimed to have been caused by an accidental injury or trauma, the following postulates be answered: (1) a definite description by the reporting surgeon of the trauma at the time it was sustained; (2) definite proof by every possible means of examination at the time the injury was sustained that no tumor already existed at the site of the truama; and (3) definite signs and symptoms of a pathologic process continuing at the site of the trauma until a malignant tumor appeared and was positively diagnosed.

Aggravation of a tumor by trauma is always a much discussed subject in compensation cases. The granting of an award in such instances seems reasonable when there is no doubt that the trauma accelerates the pathologic process, or when certain complications have arisen that would not have occurred in the progress of the disease had not the alleged injury been sustained. At no time was the law intended to protect or insure the worker

against cancer that is not the result of causes in his occupational environment. The factor of aggravation constantly confuses the issue in cases of cancer as well as of other diseases. For this reason, it is well to be familiar with exactly what is meant by aggravation. Ewing stated that aggravation exists when "an injury hastens the death of a patient . . . but when, however, the trauma merely leads somewhat prematurely to complications which are inevitable in the course of the disease and which are about to occur in the normal course, it is inequitable to assume that any aggravation has occurred . . . unless the trauma introduces into the course of the disease something which does not belong there and which works to the disadvantage of the patient, aggravation may not properly be assumed."

Assuming that there is no deliberate attempt at deception, it is well to keep in mind that tumors are often present for years before they are recognized. Further, even though the injured person was examined at the time of the alleged injury without a tumor's having been detected, the possibility of its having been present cannot be excluded. Of even greater significance, is the fact that certain tumors are prone to remain latent and unrecognized. In fact, the primary site of such a tumor can often be determined only by postmortem examination. This is especially true of tumors (carcinoma) of the thyroid, the male breast, the prostate, the kidney, and the testicle. Such tumors metastasize in a bizarre fashion, remote from the primary growth, and frequently involve the skeleton.

Often, it has been noted that a person with a silent or unnoticed tumor (especially a testicular tumor) seems more liable to injury at the tumor site. In addition to the tendency of injuries to occur in the tumor-bearing area, there seems to be intensification of the subjective symptoms and local effects of the injury. Such tumors, e.g., tumors of the testicle, produce such local conditions as increased bulk, fixation in the organ, adherence to the skin, and deep structures, and often some inflammatory reaction. Under these circumstances, a simple blow, twist or pressure is often capable of injuring the tissues and causing pain and hemorrhage, whereas, under normal circumstances the effect of the same simple blow, twist, or pressure on normal tissues would have been nil. This predisposition is called "traumatic determination." Ewing once said, "Traumas reveal more malignant tumors than they cause." Pack described this phenomenon as "a strange paradox that injury to a part of the body containing an unknown tumor may be an accident beneficial to the patient, as it sometimes leads to the discovery of the tumor at a time when cure is still possible." Because of such phenomena, it is always well to remember that whenever an apparently trivial injury is said to have produced some peculiar and exaggerated effect and a tumor is later discovered, the tumor probably antedated the injury.

The author offers postulates which he hopes will help to evaluate the role of trauma in neoplastic disease. In all cases of trauma, careful study is indicated in order to establish, as far as possible, a causative relation to the occupational environment. (Wershub, L. P., Medicolegal Aspects of Carcinoma of the Urinary Tract: J. Internat. Coll Surgeons, XXIV: 562-566, November 1955)

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Leprosy - Pathologic Changes In

This presentation records the gross and microscopic changes observed in necropsy material from leprosy patients. Fifty consecutive necropsies performed at the National Leprosarium at Carville, La., are reviewed.

All of the 50 cases presented in this study concerned patients at the National Leprosarium where 46 of the gross necropsies were performed. The remaining 4 gross necropsies were performed at the New Orleans U. S. Public Health Service Hospital, where the tissues from the 50 cases were studied microscopically and the clinical data analyzed.

Routine sections were made of heart, lung, spleen, liver, adrenal gland, kidney, testis, epididymis, skin, peripheral nerves (usually ulnar), gastrointestinal tract, lymph node, thyroid gland, pituitary body, bone, bonemarrow, eye, brain, and spinal cord. Tissues were removed from additional sites when indicated. All of the tissues were fixed in 10% formalin. Routine hematoxylin and eosin stains, as well as acid-fast stains, were made of all tissues. The acid-fast quality of Myco. leprae is more difficult to demonstrate than that of Mycobacterium tuberculosis, and in the authors' experience, the Fite-Cambre-Turner technique is superior to other modifications of the Ziehl-Neelsen stain. Bennhold's congo red and the crystal violet stains gave the most satisfactory results for demonstration of amyloid. Mallory's trichrome stain was useful in evaluating late testicular changes.

During the 5-1/2 years covered by this study (September 1948 through April 1954) the average census at the National Leprosarium was 385 patients. Seven percent of these were considered to have leprosy of the tuberculoid type and the majority of the remaining were considered to be of lepromatous type. Of the 50 cases in this series, 48 were of lepromatous type and 2 were of tuberculoid type. Therefore, this review is essentially one of lepromatous leprosy. In addition to being the predominant type at the National Leprosarium, it is also the type most frequently seen in the United States. The 50 cases represent 92.6% of all the deaths that occurred at the National Leprosarium during the 5-1/2 year study.

Thirty-four of the patients were men and 16 were women, giving a 2:1 ratio which is approximately the figure given for the sex distribution of leprosy throughout the world. The race was listed as white in 29 cases, Mexican in 10, colored in 8, and Chinese, Japanese, and Filipino, respectively, in the 3 remaining cases.

The average age at the time of death was 58.8 years, the youngest patient being 31 and the oldest 79 years. The average length of life from the onset of obvious signs and symptoms of leprosy was 20 years. Five of the patients gave a family history of leprosy in one or more relatives.

In the sections describing the gross and microscopic findings, many of the observations are of necessity composite. Upon inspection of the body, the disfigurement of the nose, eyes, extremities, and skin was quite obvious. Corneal opacities were frequent and in some cases the eyes had been enucleated. "Saddle" nose deformity of varying degrees usually was present. The ear lobes were often enlarged and redundant. The eyebrows and eyelashes were sparse, especially laterally, and some patients had none at all. Considerable induration of the facial skin and underlying tissues resulted in the typical leonine facies of leprosy.

The skin lesions varied considerably depending upon the activity of the disease at the time of death. Areas of irregular pigmentation, old scars from burns or lepromatous nodules, and a diffuse atrophy of skin over wide areas of the body with thin "onion skin" wrinkling, were seen. Hypopigmented areas were frequent in the skin of deeply pigmented persons. A few patients presented, sometimes, raised erythematous areas of apparently active lesions.

Obvious deformities of the hands and feet often were present with resorption of bone and shortening of fingers, toes, and sometimes other bones. Usually, the shortened finger or toe had a small distorted nail remaining at its tip for the digits in fact seldom "fall off" as in the cicatrizing disease ainhum, but rather undergo a progressive resorption from the tip. Many patients had trophic ulcers of the extremities and some had had previous amputations. Muscle atrophy, especially of the interossei of the hands, was prominent in many cases with marked nerve involvement. Usually, the ulnar nerves were palpably enlarged. Testicular atrophy was usually quite marked. Several cases presented gynecomastia.

It must be remembered that the pattern of lepromatous leprosy is presented as seen in necropsies at the National Leprosarium in the United States, and that the pattern of leprosy in many other parts of the world is quite different. It should also be recalled that in the natural history of the disease the tendency is toward spontaneous remission after many years. The so-called "burned-out" cases may reveal few or no organisms and are left only with the residual neural and other tissue damage as described

in many of the present cases. One of the oldest patients in this series became blind from leprous changes in 1898, 8 years after the clinical onset of leprosy. He refused virtually all specific therapy except for sporadic doses of chaulmoogra oil totalling approximately 1000 cc. Several years prior to death, over 60 years after the onset of his leprosy, skin scrapings were positive only occasionally. No organisms were demonstrable at necropsy.

It should be pointed out that 30 of these patients (60%) received sulfone therapy for at least 2 years, and 10 patients received sulfone therapy for a shorter period. It is believed that this treatment has, to some extent, influenced the pattern of the disease in some of these patients. Undeniably beneficial effects are produced clinically by the sulfones, as reported recently by Chang, Wolcott, and Doull. However, they pointed out that bacteriologic improvement may lag behind clinical improvement for years. Skin scrapings were positive clinically just prior to death in 23 of the 30 patients who received sulfone therapy for at least 2 years. As mentioned, Myco. leprae was demonstrable also in necropsy tissues in 22 of these cases. Moreover, it is believed that, if additional multiple sections of skin and nerve had been taken, organisms would have been found in a higher percentage of cases.

As seen by the average duration of life of 20 years after the recorded onset of obvious signs and symptoms, leprosy per se is not a rapidly fatal disease. Also, the average age at the time of death of just under 59 years is less than 10 years below that of the population as a whole. In only one patient in this series was widespread leprosy itself considered to be a major factor in the immediate cause of death. However, the disabling features of leprosy often were seen, as in the contractures, resorbed digits, neurotrophic ulcers, renal insufficiency, and blindness.

While leprosy was not an immediate cause of death, it very frequently produced secondary changes which in turn were responsible eventually for the patient's demise. Thus, in 38% of the cases, amyloidosis of the kidney secondary to the leprous infection produced renal insufficiency with uremia, often coma, bronchopneumonia and/or pulmonary edema, and death. The cause of death in another 14% was active pulmonary tuberculosis to which the patient might have been predisposed by the debilitating effects of the leprous infection. It might be assumed then, that in approximately 50% of the cases, leprosy was indirectly responsible for death. In the other 50%, diseases to which any person might succumb, such as neoplasms and myocardial infarction, were the causes of death.

From the descriptions, it can be seen that few tissues in the body were free from demonstrable involvement by lepromatous leprosy at necropsy. The principal ones not involved included the lower respiratory tract, the heart and great vessels, the gastrointestinal tract, the central

nervous system, and the female reproductive organs. Isolated instances of involvement of most of these sites have been reported in the literature, but their occurrence must be exceedingly uncommon. Viscera, such as spleen, liver, and adrenal gland contained lepromatous lesions in one-third of the cases in this series. In 6 of the 10 patients believed to be clinically arrested (12 consecutive negative skin scrapings) organisms were demonstrated at necropsy.

A striking feature secondary to leprosy in these patients was the frequency with which amyloid was seen (almost one-half of the cases). When the kidney was involved by amyloidosis, it usually was very markedly altered and resulted in marked renal insufficiency which was incompatible with life. The pathogenesis of the deposition of amyloid, while obviously related to the leprous infection of the body in general, still remains theoretical. (Powell, C.S., Swan, L.L., Leprosy: Pathologic Changes Observed in Fifty Consecutive Necropsies: Am. J. Path., XXXI: 1131-1141, November-December 1955)

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Applications Desired for Graduate Medical Training

1. Applications are desired for residency training in all specialties. Eligible are Regular officers and Reserves who have completed their Selective Service obligations, or will accept a Regular Navy commission. Hospitals approved for residency training are: U.S. Naval Hospitals, Bethesda, Md.; Chelsea, Mass.; Great Lakes, Ill.; Oakland, Calif.; San Diego, Calif.; Philadelphia, Pa.; Portsmouth, Va.; and St. Albans, N.Y.

2. Letters of application should be addressed to the Chief of the Bureau of Medicine and Surgery via official channels, and should contain an adequate service agreement in accordance with BuMed Instruction 1520.7 of 4 August 1954.

3. The following are excerpts from a letter sent to all Navy Interns by the Surgeon General:

"Interns who will remain on active duty under the provisions of the Universal Military Training and Service Act, as amended, will be eligible for consideration for assignment to residency training duty upon completion of Selective Service military requirements, or immediately upon acceptance of a Regular Navy commission. Regular officers may fulfill their Selective Service requirements concurrently with the period of obligated time required after completion

of training. As you may be aware, Navy interns are eligible to make application for transfer to the Regular Navy after completion of six months of internship. In this regard, those officers transferring to the Regular Service should make application for a commission not later than the end of January 1956. The administrative procedures needed to process an application are somewhat time consuming, and early application will insure completion of these procedures prior to termination of internship.

Those of you who have completed your Selective Service active duty may apply for residency training to commence upon termination of internship. While all applications for residency training should be for one year at a time, it is expected that those officers whose progress is satisfactory will be permitted to complete the required formal training without interruption. Every effort will be made to accomplish this insofar as Service needs will permit. It is expected that vacancies will be available in all specialties by 1 July 1956, and application for training may be made at once. For training received in a naval hospital, you are required to serve on active duty one year for each year of training received. Training in civilian institutions requires a two-year obligated service agreement for the first year of training received, and one year of obligated service for each successive year. During Navy sponsored civilian training, medical officers continue to draw the full pay and allowances of their rank with, of course, the cost of tuition and fees being borne by the Navy Department." (ProfDiv, BuMed)

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Accreditation Problems

How complete do the minutes of the various departmental and staff meetings have to be? In general monthly meetings, does a case which is presented have to be recorded in the minutes? Does the general discussion of the case and subject being discussed have to be recorded?

The minutes of discussions at medical staff meetings, departmental meetings, clinico-pathological conferences and, in fact, any clinical meeting should be concisely recorded and reveal a thorough review and analysis of the clinical work done in the hospital. The minutes should include a brief clinical abstract and pertinent discussion on any case whether it be selected death, unimproved case, infection, complication, error in diagnosis or result of treatment on a patient in the hospital at the time of the meeting or recently discharged.

We cannot tolerate minutes which read—

"A case of peripheral vascular disease was reported . . . Meeting adjourned."

(Babcock, K. B., Accreditation Problems: Hospitals, 29:32, November 1955)

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Board Certifications

American Board of Anesthesiology
LT William R. Stilwell (MC) USNR (Active)

American Board of Dermatology and Syphilology
LT John J. Downey (MC) USN

American Board of Internal Medicine
LTJG Charles F. Forester (MC) USNR (Inactive)

American Board of Obstetrics and Gynecology
LCDR John P. Marty (MC) USNR (Active)

American Board of Ophthalmology
LT Robert A. Ballou (MC) USNR (Active)
LCDR Lockland V. Tyler, Jr. (MC) USN

American Board of Pathology
LCDR Sholom S. Barron (MC) USNR (Active)

American Board of Pediatrics
LT Thomas B. Delaney (MC) USN

American Board of Preventive Medicine
CAPT Allan S. Chrisman (MC) USN
CAPT Lloyd B. Shone (MC) USN

American Board of Surgery
LT John E. Driscoll (MC) USNR (Active)
CDR Robert W. Mackie (MC) USN
CDR Everett J. Schmitz (MC) USNR (Active)
CDR George T. VanPetten (MC) USN

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From the Note Book

1. Rear Admiral R. W. Malone, DC, USN, Assistant Chief for Dentistry and Chief of the Dental Division, Bureau of Medicine and Surgery, accompanied Doctor F. B. Berry, Assistant Secretary of Defense (Health and Medical) and his civilian advisory group on a visit to medical and dental activities in military installations of the Caribbean area and Florida. (TIO, BuMed)

2. The Navy Department was recently awarded an impressive bronze plaque by the National Committee on Films for Safety for the Bureau of Medicine and Surgery film entitled: "Breathe and Live." (MN-7498a) The film was accorded highest honors in the occupational field for non-theatrical films on safety produced or released in 1954. The original award is now on display at the Naval Photographic Center, Naval Air Station, Anacostia, D. C. (BuMed Info. Memo)

3. The U. S. Naval Hospital, San Diego, Calif., has been approved for the establishment of a course of instruction in Urological Technic for hospital corpsmen. The first class will be convened in January 1956. (TIO, BuMed)

4. In November 1954, the Dental Division made an initial distribution of 20,000 copies of a 50,000 printing of the booklet, "The Care of Your Teeth and the Prevention of Dental Disease, NavMed P-5039." Now, just a year later, all but 9000 copies of the original 50,000 are gone, and there are back orders totaling 15,000. An additional printing has been ordered. It is evident that Navy dental officers are using this booklet to "spread the word" of the value of oral hygiene and how to attain it. (TIO, BuMed)

5. A selection board is tentatively scheduled to convene at the Navy Department, Washington, D. C., on or about February 7, 1956, to recommend Naval Reserve Officers of the Medical, Dental, and Medical Service Corps on inactive duty for promotion to Captain. (TIO, BuMed)

6. SecNav Instruction 5420.70 of November 30, 1955, transmits Department of Defense Instruction 5136.7 of November 25, 1955, which establishes a Department of Defense Dental Advisory Committee under the Assistant Secretary of Defense (Health and Medical). This committee shall advise and assist the Assistant Secretary of Defense (Health and Medical) in the development and implementation of Department of Defense policies, plans, and programs required to provide adequate, efficient, and economical dental care and services for Armed Forces. (TIO, BuMed)

7. Experience with prescalene and deep cervical lymph node biopsy in 50 consecutive cases with previously undiagnosed intrathoracic lesion is reviewed in Surg. Gynec. & Obst., December 1955; R.G. Connor, M.D.

8. In a series of 100 cases of Dupuytren's contracture, it has been found that the site and degree of the lesions, the choice of treatment and the surgical technique constitute the most important factors in prognosis. Complete removal of palmar fascia, including the palmar and digital lesion, appears to be the most effective treatment. J. Bone & Joint Surg., December 1955; Raoul Tubiana, Paris, France.

9. Data presented in this article and increasing experience indicate that the properly selected patient with cirrhosis of the liver does not constitute an unfavorable surgical risk, provided the diagnosis is made in advance and proper precautions are taken before, during, and after the operation. Arch. Surg., December 1955; D. Cayer, M.D., M.F. Sohmer, M.D.

10. A rapid simple method for estimating the CO content of blood is described, whereby the CO is liberated from the carboxyhemoglobin by one reagent and determined calorimetrically by drawing the CO through another reagent in a commercially available sampling tube. (J. Lab. & Clin. Med., December 1955; H.I. Chinn, Ph D., et al.)

11. The medicolegal aspects of chemical tests of alcoholic intoxication are discussed in Canadian Services Medical Journal, December 1955; I.M. Rabinowitch.

12. Characteristics desirable in a topical anesthetic for ophthalmic procedures are discussed in Am. J. Ophth., November 1955; J.G. Linn, Jr. M.D., LTJG E.K. Vey, MC USNR.

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BUMED NOTICE 6120 8 December 1955

From: Chief, Bureau of Medicine and Surgery
To: All Ships and Stations Having Medical Personnel Regularly Assigned

Subj: NavMed-X (Recruiting Statistics); submission of

Ref: (a) Art. 23-15, ManMed

This notice advises field activities of the latest revision of NavMed-X to be used in submission of the annual report required by reference (a).

BUMED NOTICE 5212 9 December 1955

From: Chief, Bureau of Medicine and Surgery
To: Ships and Stations Having Medical/Dental Personnel Regularly Assigned

Subj: Retirement of medical and dental records to Naval Records Management Center, Garden City, New York

Ref: (a) Art. 23-303, ManMed

This notice advises that medical and dental records are not to be shipped to the Naval Records Management Center, Garden City, New York, after 31 December 1955. Such records are to be held temporarily by addressees for forwarding to the Naval Records Management Center, St. Louis, Mo., after 1 June, '56.

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BUMED INSTRUCTION 6260.6 13 December 1955

From: Chief, Bureau of Medicine and Surgery
To: All Ships and Stations

Subj: Hearing conservation program

Encl: (1) Outline of Hearing Conservation Program
(2) Glossary of Terms
(3) Bibliography

This instruction provides a general guide for the establishment and implementation of uniform and effective hearing conservation programs throughout the Naval Establishment. The basic elements of a program designed to prevent hearing loss in personnel employed in areas of high noise intensity are outlined in enclosure (1). Enclosure (2) is added to promote uniformity in terms used in reporting on hearing conservation programs. Enclosure (3) is a source of further detailed information pertinent to this program.

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BUMED NOTICE 1520 15 December 1955

From: Chief, Bureau of Medicine and Surgery
To: Ships and Stations Having Officers of the Medical Corps Regularly Assigned

Subj: Guidelines for Bureau defrayment of travel and perdiem expenses for medical officers attending civilian short courses

This notice provides guidelines for the attendance of medical officers at civilian sponsored short courses, seminars, etc.

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BUMED INSTRUCTION 3740.1 16 December 1955

From: Chief, Bureau of Medicine and Surgery
To: All Stations Having Physiology Training Devices and/or Ejection Seat Trainers

Subj: Aviation Physiology Training Program; augmentation of current instruction in

Ref: (a) OpNavInst 3740.3A, Subj: Aviation Physiology Training Program

The purpose of this instruction is to provide professional guidance to flight surgeons in carrying out the provisions of reference (a).

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BUMED INSTRUCTION 6230.8 Sup 1 16 December 1955

From: Chief, Bureau of Medicine and Surgery
To: All Ships and Stations

Subj: Poliomyelitis vaccine, Salk; distribution and use of in the continental United States

Ref: (a) BuMedInst 6230.8 of 16 September 1955
(b) BuMed disp 0220102 of December 1955, same subj (NOTAL)

This instruction supplements previous instructions by promulgation of policies concerning distribution and use of poliomyelitis vaccine (FSN IN62790) within the continental United States.

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BUMED INSTRUCTION 1520.2C 19 December 1955

From: Chief, Bureau of Medicine and Surgery
To: All Ships and Stations Having Dental Corps Personnel Regularly Assigned

Subj: Graduate and postgraduate training for officers of the Dental Corps, U.S. Navy and U.S. Naval Reserve on active duty.

Ref: (a) Art 6-82, ManMed

This instruction informs all officers of the Dental Corps, U.S. Navy and U.S. Naval Reserve, on active duty concerning graduate and postgraduate training.

BuMed Instruction 1520.2B of 10 November 1954 is canceled.

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MEDICAL RESERVE SECTION

Outstanding Naval Reserve Medical Companies Commended

Seven Naval Reserve Medical Companies were selected as outstanding in their respective Naval Districts for fiscal year 1955, and, in recognition of this, each Commanding Officer received a commendatory letter from Vice Admiral J. L. Holloway Jr., USN Chief of Naval Personnel. In forwarding these commendations, the Surgeon General extended his congratulations to each Commanding Officer and the members for their noteworthy achievement during fiscal year 1955.

The selected Naval Reserve Medical Companies, their Commanding Officers, and addresses follow:

First Naval District

NavRes Medical Co. 1-3
Captain E. H. Drake MC USNR
58 Deering St., Portland Me.

Third Naval District

NavRes Medical Co. 3-2
Captain R. E. Meek MC USNR
N. Y. Hospital, 525 E. 68th St. NYC.

Fourth Naval District

NavRes Medical Co. 4-16
LCDR Wm. M. Fischbach MC USNR
5203 Delhi Pike
Cincinnati 38, Ohio

Sixth Naval District

NavRes Medical Co. 6-3
LCDR L. D. Hagaman MC USNR
Boone, N. C.

Eighth Naval District

* NavRes Medical Co. 8-2
Captain J. S. Webb Jr., MC USNR
Baptist Hospital
2700 Napoleon Ave, New Orleans, La.

Ninth Naval District

* NavRes Medical Co. 9-4
Captain R. E. Duncan MC USNR
909 Argyle Building, Kansas Cy. Mo.

Twelfth Naval District

NavRes Medical Co. 12-5
LCDR J. M. Yalon MSC USNR
Rm. 309 Federal Office Bldg.
San Francisco, 2, Calif.

* A salute and special recognition to Medical Companies 8-2 and 9-4 for attaining this outstanding evaluation for the second consecutive year!

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Active Duty Training for West Coast Medical Department Officers

A 5-day course in Special Weapons, Isotopes, and Military Medicine is scheduled to convene at U. S. Naval Station, Treasure Island, San Francisco, Calif., Monday 27 February 1956, and continue through 2 March 1956.

This course will present an up-to-date review of problems and information relating to various medical aspects of special weapons and radioactive isotopes with primary emphasis on their application to military and naval medicine and civil defense.

Subjects will be presented by speakers of outstanding prominence in their specialties; hence, it is assured that the presentation will be interesting and informative to all Medical Department officers.

Rear Admiral Eugene R. Hering MC USN(Ret) will lecture on "Field Medicine with the Fleet Marine Force."

Quotas for this course have been authorized for Districts 11, 12, & 13. All Naval Reserve Medical Department officers, male and female, are eligible to attend. No security clearance is required.

PREVENTIVE MEDICINE SECTION

Recent Research in Infectious Diseases

The following four abstracts, printed in the Proceedings of the 28th Annual Meeting of the Central Society for Clinical Research, are of particular interest to Medical Department personnel interested in infectious diseases.

2. Studies on the Environmental Dissemination and Aerial Transmission of Tubercle Bacilli

The mechanism of environmental dispersion of tubercle bacilli and its influence upon the development of pulmonary tuberculosis is incompletely understood. The hypothesis generally accepted is that primary pulmonary tuberculosis is an air-borne infection resulting from the inhalation of particles sufficiently small to reach and be retained in the alveoli. The particle size distribution of aerosols dispersed by tuberculous patients and the factors which influence their production, pathogenicity, and survival in the environment are unknown. The objective of this study was to acquire data which would provide a consistent explanation of the mode of transmission of tuberculosis.

Quantitative bacterial air and surface-sampling techniques of proved efficiency were used in hospital wards and in an experimental room to assess the presence of the infectious particles in the air and upon surfaces and fabrics, and to measure their survival rate. The patients in these environments were bacteriologically confirmed open cases of pulmonary tuberculosis. The 640 cubic foot experimental chamber simulated conditions which occur in natural spread of air-borne disease through control of temperature and relative humidity. Careful study of 1254 samples of air, surfaces, dust, and bedding in rooms occupied by sputum-positive tuberculous patients failed to reveal any virulent tubercle bacilli, even when the patients were actively coughing. In five instances, avirulent acid-fast bacilli were isolated in these experiments.

Studies on the survival of artificially generated aerosols of Mycobacterium phlei revealed that these acid-fast bacilli failed to survive in

the air beyond several hours at any relative humidity; furthermore, a relative humidity of 30% was most lethal. Earlier studies using a laboratory strain of human tubercle bacilli (H37Rv) demonstrated that these organisms, when suspended in various vehicles and deposited as droplets upon glass surfaces, failed to survive beyond 37 days at any relative humidity. Identical results have been obtained in recent studies utilizing the acid-fast bacilli naturally present in sputum from tuberculous patients.

These results suggest that persisting environmental contamination with infectious particles is not a common hazard associated with pulmonary tuberculosis, and that when inhalation infection does occur, it follows the coincidence of specific conditions not yet defined. (Abramson, S., Lester, Wm. Jr.)

15. Epidemiology of Influenza as Revealed by Serum Pools from Various Age Groups

In previous communications to the Society, it was shown that serum pools collected by random sampling from individuals of all ages reveal changes in titer of antibodies against influenza virus corresponding to the occurrence of outbreaks of that disease. Low levels of antibody against the causative virus are present prior to an outbreak and a distinct rise in average titer follows an outbreak. The levels at which antibodies persist between outbreaks likewise were demonstrated. For the past three years, sera of infants and children were collected and divided into pools according to age. Pools of serum of adolescents, young adults, and individuals over 40 years of age also were collected. The antibody content of all of these pools against representative strains of influenza virus was determined.

In agreement with reports of Francis and others, the authors find antibodies against swine influenza virus only in adult sera. In their serum pools, antibodies against PR-8, Type A, isolated in 1934, were not found in any significant titer in children born after the year 1944. Antibodies against the Lee strain of Type B isolated in 1940 were not found in the pooled sera of children born after 1945, whereas antihemagglutinins against more recently isolated Type B strains were found in children born in more recent years. The A prime viruses, prevalent since 1946, have caused outbreaks as recently as 1953. Antibodies against these viruses are found in the sera of nearly all children.

It seems possible by analysis of the antibody content of sera collected by age groups to determine when a given virus strain ceased to be present in a community and when new virus strains appeared.

The authors' findings suggest that recent influenza outbreaks occurred as a result of appearance of virus strains of new antigenic patterns rather than by reappearance of older strains after loss of population resistance.

The findings in the sera of children indicate a decided lack of resistance to the older influenza viruses. The possibility exists that reappearance of one of these strains in virulent form could readily attack a large segment of the younger generation. (Broun, G.O., Schmidt, R.R., Murry, F., Oligschlaeger, D.)

33. The Association of APC Viruses with Respiratory Illness in a Student Population

Filterable agents, presumably viruses, which produce degeneration of tissue culture growth of human carcinoma cells (strain HeLa), human embryonic lung, and monkey kidney have been isolated from presumably normal human tonsils and adenoids grown in tissue culture, and from throat washings of patients with respiratory illnesses. Studies of the immunology and host range have indicated that they were similar to a new group of agents isolated by Werner and Hilliman and Huebner and associates, and designated APC (adenoid-pharyngeal-conjunctival) agents.

To determine the frequency with which these agents were associated with sporadic illness in a student population, throat washings or throat swabs from 168 febrile infirmary admissions were inoculated into HeLa cultures. Serial passages in tissue culture were made when suggestive or definite degeneration was observed. Complement fixation tests by a plate method have been carried out thus far on 71 paired serum samples from such individuals. Illnesses studied were predominantly respiratory.

A cytopathogenic agent was obtained from 23 students. On the basis of the type of degeneration and rise in complement fixation titer, 8 were classified as belonging to the APC group. Six appeared to be herpes simplex, 3 mumps, 1 chicken pox, and 5 are as yet unidentified. Five other individuals with negative isolations had infections associated in the APC group on the basis of a fourfold or greater rise in complement fixation titer. Thus, 8.5% (14) of the 168 patients studied have had illnesses associated with APC viruses. The clinical diagnoses in these patients were: acute upper respiratory infection, 5; pharyngitis and/or tonsillitis, 8; primary atypical pneumonia, 1; bronchitis, 1. Only 1 patient had conjunctivitis. No distinctive feature of the cases studied thus far has permitted a clinical diagnosis of an APC infection. These results will be compared with those obtained in military populations. (Evans, A.S., Morse, H.)

53. A Rationale for Modification of Influenza Virus Vaccines Derived from Experiments in Man

Strains of influenza viruses A and B have varied antigenically from year to year since the original strain of each type was identified. Yet but

in a single instance was it found that vaccine made from strains isolated in previous years (1934 and 1943) failed to induce antibody to, or protection against, the prevailing virus. The results of the present studies, in which over 1000 persons in three age groups were vaccinated with one of eight experimental vaccines, demonstrate that antibodies against strains of influenza A-prime isolated from 1947 to 1955 are still induced by adequate amounts of vaccine prepared with a 1947 strain (FMI). In contrast, antibodies to recent strains of influenza B are relatively low following vaccination with a 1940 virus (Lee). Hence, it would appear logical and timely to alter the vaccine formula by adding a recent strain of influenza B, but not of influenza A-prime.

In addition, the results of vaccine experiments in children, military recruits, and persons over 30 years demonstrate that excellent antibody response to viruses prevalent during the childhood of each of these cohorts of the population may be achieved by giving strains encountered after childhood. However, in order to induce antibody against strains not previously experienced, those viruses must be included in a vaccine. Therefore, to achieve for all ages by vaccination that broad spectrum of antibodies characteristic of the older segment of our population whose resistance to influenza is greatest, a polyvalent vaccine composed of swine (1931), PR8 (1934), FM1 (1947) strains of influenza A, and Lee (1940) and Great Lakes (1954) strains of influenza B is required. (Hennessy, A. V., Davenport, F. M.)

(Proceedings of the Central Society for Clinical Research: J. Lab. & Clin. Med., 46: 791; 799-800; 812-813; 826; November 1955)

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Training in Occupational Medicine

Applications are invited from regular naval medical corps officers, up to and including the rank of commander, for postgraduate training in preventive and occupational medicine.

The training may be requested in a school of medicine or school of public health. The school from which such training is requested shall be one accredited for graduate study by either the Council on Medical Education and Hospitals of the American Medical Association or the American Public Health Association, in accordance with the jurisdictions of these accrediting agencies.

Medical officers are needed for duty in naval industrial activities who are especially qualified and have had formal training in the field of preventive and occupational medicine.

Pneumonic Plague

(A summary of Army Technical Bulletin Medical No. 124, "Plague," appeared in the Preventive Medicine Section of the November 18 issue of the U.S. Navy Medical News Letter. The following discussion of pneumonic plague consists of a revision of paragraph 13 of Army Technical Bulletin Medical No. 47. Certain minor editorial changes were necessary in adapting the revision to Navy use.)

Pneumonic plague occurs as a primary infection or as a secondary complication of the bubonic form of plague. Primary pneumonic plague begins with fever and chilliness followed within 4 to 20 hours by a scantily productive cough yielding frothy, bloody sputum. Fever continues, and weakness, prostration, cyanosis, and dyspnea develop rapidly and are out of proportion to the pulmonary involvement found by physical examination and roentgenography. Rapid progression of the disease in untreated cases almost invariably ends in death in 48 to 72 hours; treatment with streptomycin and broad spectrum antibiotics within the first 24 hours after the onset of fever is life saving, but delay in treatment greatly lessens the chances of survival. The sputum contains great numbers of plague bacilli. Pleural pain is usually not severe, and physical signs of frank consolidation of the lungs are generally not present. Peripheral blood shows a marked polymorphonuclear leukocytosis. Hemorrhages, into either the skin or subcutaneous tissues, may appear. Approximately 5% of patients with the bubonic form develop secondary plague pneumonia. A positive diagnosis can be made by demonstrating the etiological agent in the sputum or blood in the primary pneumonic form and also in the buboes in the secondary form.

Primary pneumonic plague results from discharges from the respiratory tract of patients with the pneumonic form, either primary or secondary. Secondary plague pneumonia develops in cases of bubonic plague contracted from infected fleas.

Transmission is by direct contact with an infected individual or indirectly from articles contaminated with discharges from the respiratory tract of such a person. The organisms may also gain entrance to the respiratory tract in the handling of the carcasses of infected rodents. Although, infection usually takes place through the respiratory tract, the conjunctiva may also be a portal of entry.

The incubation period in bubonic plague is between 2 and 10 days, usually 3 to 4 days. In primary pneumonic plague, it may be as short as 2 to 3 days, but all contacts must be observed for 8 days. As long as the etiological agent is present in discharges from the respiratory tract, the disease must be considered communicable during the period of acute symptoms.

Susceptibility is general, but an attack of plague confers immunity for a number of years. Some degree of active immunity results from vaccination, although frequent booster inoculations are required to maintain such resistance.

Outbreaks of pneumonic plague occur periodically in certain regions where bubonic plague is endemic (i. e., in modern times in Manchuria, Madagascar, South Africa, and occasionally elsewhere). Reasons for outbreaks are poorly understood, but climatologic and sociologic conditions are thought to contribute. Secondary plague pneumonia in a patient with flea-transmitted infection begins the man-to-man cycle of pneumonic epidemics. The incidence of fleaborne bubonic plague in man is related directly to the plague incidence in rodents in the immediate environment. The species of rodent which act as the reservoir of the disease vary in different regions. In the United States, plague is endemic in various species of rodents in the Pacific and Mountain States. In South America, it occurs in Venezuela, Guiana, the coastal region of Brazil, the northern part of Argentina, Paraguay, Bolivia, Peru, and Ecuador. In Africa, endemic areas are widely distributed and include the west coast, South Africa, East Africa, the Belgian Congo, a band in the north from Morocco to the Nile delta, and Madagascar. In the Middle East, it occurs in Syria, Iran, and Iraq. The disease is found in all parts of India, Ceylon, Burma, Thailand, Indo-China, Malaya, and the Malay Archipelago. It is endemic in much of the coastal area of China, throughout Manchuria, and also in scattered areas of the interior. Other foci exist in Hawaii, New Caledonia, and the Azores.

The rapidly fatal outcome of pneumonic plague in individual patients and the explosive nature of the outbreaks demand immediate institution of therapeutic and control measures, often before bacterial confirmation is effected.

1. Isolation should be carried out until plague bacilli are no longer present in discharges from the respiratory tract. Because of the extremely high communicability during the period of acute symptoms, all attendants should be provided with gowns, goggles, masks, and rubber gloves which should be worn when in contact with the patient as well as when disposing of articles contaminated with infective discharges. The improved type of face mask, consisting of a singly layer of cotton flannel filter fabric, covered on each side with a single ply of gauze, should be used.

Articles should not be removed from the environment of the patient unless disinfected by boiling or an equivalent method and terminal disinfection is necessary. The bodies of persons dying of plague should be handled only under strict aseptic precautions.

2. Quarantine. Contacts of cases of pneumonic plague must be held in strict quarantine for 8 days with careful periodic observation and

recording of temperature every 4-6 hours. Contacts developing fever are immediately isolated and given specific therapy.

3. Immunization. In the face of an epidemic, or when the threat is appreciable, all persons in the region should be immunized or reimmunized. Special attention should be given medical attendants.

4. Investigation of Source of Infection. In pneumonic plague, search should be made for other human cases to which the patient may have been exposed. The local rodent population should be examined for evidence of plague, and antirat measures should be intensified.

5. General Measures. Because effective flea and rodent control measures are important in preventing bubonic and septicemic plague, such measures indirectly reduce the chance of an outbreak of pneumonic plague. Direct man-to-man spread of pneumonic plague is controlled by quarantine of the region, prompt isolation of all patients and contacts, early treatment of cases, and immunization of the population at risk.

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Department of Defense Standards for Insect and Rodent Control

The new look in the Navy's insect and rodent control program has been further freshened by the recent issuance of Department of Defense vector and economic pest control standards (BuDocksInst 6250.3 of 31 October 1955). These standards were promulgated to ensure the safe, efficient, and economical control of insects, rodents, and other pests that are injurious to health and morale, cause discomfort to personnel, and destroy property at military installations.

The principal requirements established by these standards are for:

1. The establishment and conduct of a scheduled preventive program of pest control as a part of the installation "maintenance" management program.

2. Use of only standard issue pesticides of known composition and origin and standard dispersal equipment.

3. Use of only certified personnel for the accomplishment of pest control operations.

4. Provision of protective devices and clothing wherever control operations require their use.

5. Provision of means for safe storage and transportation of potentially toxic formulations.

6. Maintenance of adequate records of operations and costs.

7. Review of all pest control contracts by higher authority to ensure safety, quality of work, and provision for control operations at a level of

effectiveness at or above that which is obtainable by the use of installation personnel.

Procedures for ensuring conformity with these new standards will be promulgated for management activities of the Bureau of Medicine and Surgery as soon as is feasible.

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Rapid Identification of Enteric Organisms on Membrane Filters

The following summary of an article concerning experiments testing the efficiency of the membrane filter (MF) in the differentiation of enteric organisms by their colonial appearance on the filter was abstracted from the September 1955 report of Preventive Medicine Unit Number 8. Requests for copies of the complete paper may be addressed to: Preven tive Medicine Unit, Number 8, Navy No. 3923, c/o FPO, San Francisco, Calif.

"The use of the membrane filter in the rapid primary isolation of enteric pathogens is described. A tentative identification of Shigella and Salmonella organisms from rectal swabs can be established on the average in 10 hours, using serological group typing of colonies on MF.

A nutrient indicator inhibitor (NII) broth was used as the primary isolating medium for the MF technique.

Rectal swabs were obtained and processed from 134 nondiarrheal individuals and 19 patients with diarrhea. Individual isolated colonies were obtained from 109 of the nondiarrheal specimens and from specimens from 15 of the 19 persons with gastrointestinal disturbances.

Differentiation between Escherichia coli and other enteric organisms was made by observing differences in size and color. The E. coli colonies were orange while the other enteric organisms appeared either colorless or bluish-green. The E. coli colonies were usually larger than the other enteric organisms after the same period of incubation.

Approximately 70% of the clear or bluish-green colonies, when studied further, were found to be noncoliform organisms.

Experiments are presently in progress on the application of the membrane filter technique in field surveys of food handlers for the identification of enteric pathogen carriers and also in the study of the Paracolobactrum group of organisms." (Bloom, H. J., Cobb, J. M., Rapid Identification of Enteric Organisms on Membrane Filters. Submitted to Am. J. Clin. Path., for publication.)

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Foreign Animal Diseases

The U. S. Livestock Sanitary Association has recently published a 270-page report entitled "Foreign Animal Diseases, Their Prevention, Diagnosis, and Control." The book's information—particularly that concerning diseases transmissible from animals to man—should be useful to medical officers and other Medical Department personnel.

Detailed knowledge of each disease concerning changes, diagnosis, prognosis, and epizootiology, control, and public health aspects, is included. The report also deals with insect vectors, the part they play in spreading certain diseases, and measures for effective control. Illustrations and photographs covering 28 diseases as well as references are included. A limited number of copies of this report are available to activities with a legitimate need, upon request, from the Bureau of Medicine and Surgery, attention: Code 72.

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Please forward requests for change of address for the News Letter to: Commanding Officer, U. S. Naval Medical School, National Naval Medical Center, Bethesda, 14, Md., giving full name, rank, corps, and old and new addresses.

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